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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,961	08/08/2001	Carl M. Hoffmaster	05516.089001	1995

22511 7590 12/02/2003

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EXAMINER

DANG, HOANG C

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 12/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/924,961

Applicant(s)

HOFFMASTER ET AL.

Examiner

Hoang Dang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 132-150 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 132-150 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 132, 133, 134, 135, 139, 140, 143, 145, 146, 148, 149 and 150 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGarian et al (US 5,853,054) in view of Mensa-Wilmot et al (US 6,507,025).

McGarian et al discloses the invention as claimed (see figures 1, 2, 5-9 and column 5, line 51 through column 7, line 17) except for the "redundant" cutters. It appears from figures 1, 2 and 5-9 of McGarian et al that at least some redundant cutting do occur due to the symmetrically arrangement of the cutter blades 6A and 6B and numerous cutting elements provided on these blades. In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide McGarian et al with "redundant cutters" as claimed in view of the teaching of Mensa-Wilmot et al in order to increase the durability and life of the drill bit (see column 12, lines 6-29).

As for claim 143, it would have been obvious to use cutting elements having the size I in the claimed range since such a modification would have involved a mere change in the size of a

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component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

As for claims 145, 146 and 149, it would have been obvious to use the material as claimed since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

4. Claims 136 and 147 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGarian et al in view of Mensa-Wilmot et al '025 as applied to claim 132 above, and further in view of Hansen et al (US 5,979,576) or Griffin et al (US 6,142,250).

McGarian et al as modified by Mensa-Wilmot et al discloses the invention as claimed except for the presence of a "vibration damping insert". However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide McGarian et al as modified by Mensa-Wilmot et al with a vibration damping insert as claimed because it is well known in the well drilling art to provide such an insert to enhance the stability of the drill bit or to minimize bit whirl as evidenced by Hansen et al (see column 6, lines 19-26) or Griffin et al (see column 5, lines 41-51).

As for claim 147, it is conventional in the art to mount cutting elements such that the cutting element exposure is more than half of a diameter of the cutting element as evidenced by either Hansen et al or Griffin et al (see cutting elements in the drawings of these patents)

5. Claims 137, 138 and 144 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGarian et al in view of Mensa-Wilmot et al '025 as applied to claim 132 above, and further in view of Beaton et al (US 6,269,893) or Huang et al (US 6,516,293).

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McGarian et al as modified by Mensa-Wilmot et al discloses the invention as claimed except that the cutting elements are not disclosed as being arranged such that the axial force, lateral force or mass is balanced. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange cutting elements of McGarian et al as modified by Mensa-Wilmot et al so as to have the axial forces, lateral forces and mass balanced as claimed in view of the teaching of Beaton et al (see column 5, line 32 through column 6, line 10) or Huang et al (see column 13, lines 51-61) in order to improve drilling stability or/and drilling performance.

6. Claims 141 and 142 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGarian et al in view of Mensa-Wilmot et al '025 as applied to claim 132 above, and further in view of Mensa-Wilmot et al (US 6,164,394).

McGarian et al as modified by Mensa-Wilmot et al '025 disclose the invention as claimed except for the recited range of the backrake angles. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the angles in the claimed range or use cutting elements having different backrake angles because Mensa-Wilmot et al '394 teach using cutting elements having different backrake angles and using backrake angles within the claimed range to enhance drilling performance (see column 10, lines 34-35).

### ***Response to Arguments***

7. Applicant's arguments filed September 9, 2003 have been fully considered but they are not persuasive. Contrary to applicants' argument, the "at least two reamer pads" as defined by claims 132-150 do not distinguish from expandable blades 5A, 5B, 6A and 6B (or the parts of

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members 5A-6B to which wear resistant members 52 is mounted to, see column 5, line 51 through column 6, lines 18) of McGarian et al. Similarly, the "at least one blade formed on each of the at least two reamer pads" as defined by claims 132-150 do not distinguish from the wear resistant members 52 (see Figures 6-8 and column 6, lines 1-18). McGarian et al clearly disclose a plurality of cutting elements disposed on these wear resistant members 52 (see column 6, lines 19-56).

As pointed out above, at least some redundant cutting do occur as claimed due to the symmetrically arrangement of the cutter blades 6A and 6B and numerous cutting elements provided on these blades. In any event, it is extremely well known in the well drilling art that redundant cutters may be provided to increase the durability and life of the bit (however at a higher cost) as evidenced by Mensa-Wilmot et al '025 (see column 12, lines 15-18). Contrary to applicants' argument that there is no motivation to combine the teachings of McGarian and Mensa-Wilmot, Mensa-Wilmot clearly teaches the use of redundant cutters to increase the durability and life of the drill bit. One of ordinary skill in the art would be motivated by this advantage to provide the blades of McGarian with redundant cutters. What is relied on in Mensa-Wilmot is that redundant cutters increase the durability and life of the bit. This teaching should not be limited to only stationary blades.

### *Conclusion*

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

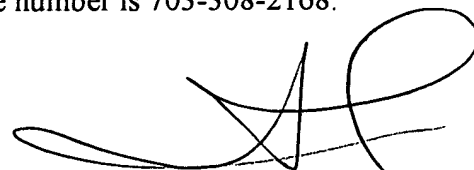
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A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang Dang whose telephone number is 703-308-2149. The examiner can normally be reached on 9:15-5:45 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Bagnell can be reached on 703-308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2168.



**Hoang Dang**  
**Primary Examiner**  
**Art Unit 3672**